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IFW AF 3652

Docket No.: MRE-0014

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS AND INTERFERENCE

In re Application of	Confirmation No.: 2475
Jae Hyuk CHO	Group Art Unit: 3652
Serial No.: 09/433,380	Examiner: Janice Lee Krizek
Filed: November 3, 1999	Customer No.: 34610

For: MULTI-STACKER FOR HANDLER

APPEAL BRIEF

U.S. Patent and Trademark Office
220 20th St. S.
Customer Window, Mail Stop Appeal Brief-Patents
Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202

Sir:

This Appeal Brief is submitted in support of the Notice of Appeal filed June 10, 2004.

REAL PARTY IN INTEREST

The party in interest is the assignee, Mirae Corporation. The assignment document is recorded at Reel 010365 and Frame 0651.

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TRANSMITTAL OF APPEAL BRIEF

U.S. Patent and Trademark Office
220 20th Street S.
Customer Window, Mail Stop Appeal Brief-Patents
Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202

Sir:

Submitted herewith in triplicate is Appellant(s) Appeal Brief in support of the Notice of Appeal filed June 10, 2004. Enclosed is Check No. 12566 for the Appeal Brief fee of $330.00.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
FLESHNER & KIM, LLP

08/10/2004-KBETEMA1-00000051-09433380
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John C. Eisenhart
Registration No. 38,128
Carol L. Druzbick
Registration No. 40,287

P.O. Box 221200
Chantilly, Virginia 20153-1200
703 766-3701 JCE:CLD/kah
Date: August 9, 2004
Please direct all correspondence to Customer Number 34610

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Void date: 08/10/2004 KBETEMA1
08/10/2004 KBETEMA1-00000045 09433380
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RELATED APPEALS AND INTERFERENCES

There are no related appeals and interferences.

STATUS OF THE CLAIMS

This is an appeal from the final rejection dated February 10, 2004 of claims 10-22 and 24-29. No other claims are pending.

STATUS OF AMENDMENTS

All Amendments filed in this application have been entered. A correct copy of appealed claims 10-22 and 24-29, including all entered amendments thereto, appears in the attached Appendix.

SUMMARY OF THE INVENTION

The present invention is directed to a multi-stacker for an IC (Integrated Circuit) handler. As shown, for example, in Figure 7 of the present application, a multi-stacker for an IC handler according to one embodiment of the invention includes a stacker frame 12 and a guide frame formed of support plates 31 and side plates 14, positioned below and coupled to a bottom of the stacker frame 12. The guide frame further comprises a guide 16 having four guide rails, as shown, for example, in Figure 4. A movement plate 24 is configured to move upward and downward within the guide and within the stacker frame 12 via motor 38, bracket 32, and LM

rail 26, as shown, for example, in Figures 5-7. A plurality of tray plates 22 are stacked on the movement plate 24. Each of the tray plates 22 is configured to receive a tray holding a plurality of semiconductor devices. One or more stopper mechanisms, formed of a blocking protrusion and actuator, a stopper 42 having a protrusion 43 and a linear cylinder 44 in the embodiment of Figure 4, may be provided which is configured to prevent one or more of the tray plates 22 from being lowered as the movement plate 24 moves downward in the guide frame. A sensor 20 may be provided which determines positions of the plurality of tray plates 22

ISSUES

1. Whether claims 10-22 and 24-29 are anticipated under 35 U.S.C. §102(b) by Chiappe et al. (hereinafter, "Chiappe"), U.S. Patent No. 4,808,057.

GROUPING OF THE CLAIMS

Appealed claims 10-13 and 15 form a single group and stand or fall together. Claim 10 is the only independent claim in this group.

Appealed dependent claim 14 forms a single group.

Appealed dependent claims 16-19 form a single group and stand or fall together.

Appealed dependent claim 20 forms a single group.

Appealed dependent claim 21 forms a single group.

Appealed claims 22 and 24-25 form a single group and stand or fall together. Claim 22 is

the only independent claim in this group.

Appealed dependent claims 26-28 form a single group and stand or fall together.

Appealed dependent claim 29 forms a single group.

THE ARGUMENT

1. 35 U.S.C. §102(b)

Chiappe discloses a workload regulator for automated production. In particular, Figure 6 of Chiappe shows a cross feed conveyor 42 for storage trays 64, which have individual storage areas 66 for respective cans 68. The cross feed conveyor 42 is positioned between magazines 50, 52 and includes conveyor 70. The magazines 50, 52 each have vertical frame members 140, horizontal members 142, and tray guides 143. Each magazine 50, 52 further has an associated tray lift 60, 60A. The lift units 60, 60A each include a piston and cylinder arrangement 164, 164a for operating a tray support frame 166, 166a, which engages a tray 64 when raised into contact therewith at least to and slightly above a level of a drive shaft 160, 162 of the tray support mechanisms 168.

In depositing an empty tray 64 on the conveyor 70, lift 60 bearing the tray 64 deposits it by being moved to a withdrawn position below the conveyor 70. The tray 64 situated in the transfer area travels left (in Figure 6) on the conveyor 70. A full tray 64 is then lifted by lift 62 and is added to the stack of trays 64 in the full tray magazine 52 from the bottom. The tray 64 is lifted until the upper surfaces of its corner pieces 182 engage the lower surfaces of the corner

pieces 184 of the tray 64 disposed above it. In this position, the lift 62 is prepared to support the weight of the entire stack of storage containers 64. The tray support drive mechanisms 160, 162 are actuated and the supports 168 are withdrawn horizontally and an entire stack is raised horizontally and the entire stack is raised in increments equal to the height of the tray 64. The drive mechanisms 160, 162 are then operated in the reverse or extended mode and the supports 168 engage the bottom of the lowermost tray 64. There upon the lift 62 withdraws to a retracted position and the entire stack is supported until a position is cycled or the reverse cycle. The trays are thus upstacked or downstacked as indicated.

A. Claims 10-13 and 15

Regarding independent claim 10, Chiappe does not disclose or suggest a stacker frame as well as a guide frame positioned below and coupled to a bottom of the stacker frame. Chiappe only discloses the magazines 50, 52, which constitute only one frame. Further, Chiappe does not disclose or suggest a plurality of tray plates stacked on a movement plate and configured to move upward and downward within a guide attached to the guide frame and within the stacker frame.

Accordingly, the rejection of independent claim 10 as being anticipated by Chiappe should be withdrawn. Dependent claims 11-13 and 15 are allowable at least for the reasons discussed above with respect to independent claim 10, from which they respectively depend, as well as for their added features.

B. Claim 14

Regarding dependent claim 14, in addition to the deficiencies discussed above with respect to independent claim 10, from which claim 14 ultimately depends, Chiappe does not disclose or suggest a multi-stacker wherein the actuator of each stopper mechanism comprises a piston and cylinder. Rather, Chiappe discloses support elements 168 operated by racks 170 and driven pinion gears 160. Accordingly, the rejection of claim 14 over Chiappe should be withdrawn.

C. Claims 16-19

Regarding dependent claim 16, in addition to the deficiencies discussed above with respect to independent claim 10, from which claim 16 ultimately depends, Chiappe does not disclose or suggest a multi-stacker wherein the elevator mechanism comprises a rail that is movably mounted on the multi-stacker and that is connected to the movement plate, a rack mounted on the rail, a motor mounted on the multi-stacker adjacent the rail, and a pinion gear mounted on a rotating shaft of the motor, wherein the pinion gear engages the rack mounted on the rail, and wherein rotational movement of the pinion gear causes the rail and the movement plate to move upward and downward. Further, Chiappe does not disclose or suggest a linear movement block mounted on the multi-stacker and configured to guide movement of the rail, as recited in dependent claim 17, a support plate connected between the rail and the movement plate and configured to dampen vibrations of the movement plate during movement of the movement plate, as recited in dependent claim 18, or at least one support plate connected to a

lower end of the rail and configured to dampen vibrations of the rail during movement of the rail, as recited in dependent claim 19. Rather, Chiappe discloses lift units 60, 62 operated by piston and cylinders 164,164a. Accordingly, the rejection of claims 16-19 over Chiappe should be withdrawn.

D. Claim 20

Regarding dependent claim 20, in addition to the deficiencies discussed above with respect to independent claim 10, from which claim 20 depends, Chiappe does not disclose or suggest a multi-stacker wherein a guide includes four guide rails that are configured to guide corners of the tray plates as the tray plates move upward and downward with the movement plate. Chiappe does not disclose or suggest such a guide. Accordingly, the rejection of claim 20 over Chiappe should be withdrawn.

E. Claim 21

Regarding dependent claim 21, in addition to the deficiencies discussed above with respect to independent claim 10, from which claim 21 depends, Chiappe does not disclose or suggest a sensor configured to determine positions of the plurality of tray plates. Chiappe does not disclose or suggest such a sensor. Accordingly, the rejection of claim 21 over Chiappe should be withdrawn.

F. Claims 22 and 24-25

Regarding independent claim 22, Chiappe does not disclose or suggest a plurality of tray plates stacked on a movement plate and configured to move upward and downward within the

guide frame, wherein each of the tray plates is configured to receive a tray holding a plurality of semiconductor devices. Chiappe only discloses trays 64, which receive respective cans 68. Thus, Chiappe does not disclose or suggest tray plates supported on a movement plate and configured to each receive a tray, each tray holding a plurality of semiconductor devices.

Accordingly, the rejection of independent claim 22 as being anticipated by Chiappe should be withdrawn. Dependent claims 24-25 are allowable at least for the reasons discussed above with respect to independent claim 22, from which they respectively depend, as well as for their added features.

G. Claim 26

Regarding dependent claim 26, in addition to the deficiencies discussed above with respect to independent claim 22, from which claim 24 ultimately depends, Chiappe does not disclose or suggest a multi-stacker wherein the elevator mechanism comprises a rail that is movably mounted on the multi-stacker and that is connected to the movement plate, a rack mounted on the rail, a motor mounted on the multi-stacker adjacent the rail, and a pinion gear mounted on a rotating shaft of the motor, wherein the pinion gear engages the rack mounted on the rail, and wherein rotational movement of the pinion gear causes the rail and the movement plate to move upward and downward. Further, Chiappe does not disclose or suggest a support plate connected between the rail and the movement plate and configured to dampen vibrations of the movement plate during movement of the movement plate, as recited in dependent claim 27, or at least one support plate connected to a lower end of the rail and configured to dampen

vibrations of the rail during movement of the rail, as recited in dependent claim 28. Rather, Chiappe discloses lift units 60, 62 operated by piston and cylinders 164,164a. Accordingly, the rejection of claim 24 over Chiappe should be withdrawn.

H. Claim 29

Regarding dependent claim 29, in addition to the deficiencies discussed above with respect to independent claim 22, from which claim 29 depends, Chiappe does not disclose or suggest a sensor configured to determine positions of the plurality of tray plates. Chiappe does not disclose or suggest such a sensor. Accordingly, the rejection of claim 25 over Chiappe should be withdrawn.

CONCLUSION

For at least for the reasons discussed above, the rejection of claims 10-21 and 24-29 over Chiappe is improper and should be withdrawn. Prompt consideration and allowance of the present application is respectfully solicited.

Respectfully submitted,
FLESHNER & KIM, LLP

John C. Eisenhart
Registration No. 38,128
Carol L. Druzbick
Registration No. 40,287

P. O. Box 221200
Chantilly, Virginia 20153-1200
703 766-3701 JCE:CLD/dcp/kah
Date: August 9, 2004

APPENDIX

10. A multi-stacker for an IC (integrated circuit) handler, comprising:

a stacker frame;

a guide frame positioned below and coupled to a bottom of the stacker frame;

a movement plate configured to move upward and downward within the guide frame; and

a plurality of tray plates stacked on the movement plate and configured to move upward and downward within a guide attached to the guide frame and within the stacker frame.

11. The multi-stacker of claim 10, further comprising at least one stopper mechanism which is configured to prevent one or more tray plates from being lowered from the stacker frame into the guide frame.

12. The multi-stacker of claim 11, wherein the at least one stopper mechanism comprises:

a blocking protrusion configured to engage a side edge of one of the plurality of tray plates; and

an actuator coupled to the blocking protrusion and attached to the stacker frame.

13. The multi-stacker of claim 12, wherein the actuator is configured to move the blocking protrusion into and out of a path of travel of the plurality of tray plates as the plurality of tray plates move from the stacker frame to the guide frame.

14. The multi-stacker of claim 13, wherein the at least one stopper mechanism comprises first and second stopper mechanisms attached to opposite sides of the stacker frame, and wherein the actuator of each stopper mechanism comprises a piston and cylinder.

15. The multi-stacker of claim 10, further comprising an elevator mechanism coupled to the movement plate and configured to move the movement plate upward and downward such that tray plates stacked on the movement plate are moved from the guide frame into and out of the stacker frame.

16. The multi-stacker of claim 15, wherein the elevator mechanism comprises:

a rail that is movably mounted on the multi-stacker and that is connected to the movement plate;

a rack mounted on the rail;

a motor mounted on the multi-stacker adjacent the rail; and

a pinion gear mounted on a rotating shaft of the motor, wherein the pinion gear engages the rack mounted on the rail, and wherein rotational movement of the pinion gear causes the rail and the movement plate to move upward and downward.

17. The multi-stacker of claim 16, further comprising a linear movement block mounted on the multi-stacker and configured to guide movement of the rail.

18. The multi-stacker of claim 16, further comprising a support plate connected between the rail and the movement plate and configured to dampen vibrations of the movement plate during movement of the movement plate.

19. The multi-stacker of claim 16, further comprising at least one support plate connected to a lower end of the rail and configured to dampen vibrations of the rail during movement of the rail.

20. The multi-stacker of claim 10, wherein the guide includes four guide rails that are configured to guide corners of the tray plates as the tray plates move upward and downward with the movement plate.

21. The multi-stacker of claim 10, further comprising a sensor configured to determine positions of the plurality of tray plates.

22. A multi-stacker for an IC (integrated circuit) handler, comprising:

a guide frame;

a movement plate configured to move upward and downward within the guide frame;

a plurality of tray plates stacked on the movement plate and configured to move upward and downward within the guide frame, wherein each of the tray plates is configured to receive a tray holding a plurality of semiconductor devices; and

at least one stopper mechanism which is configured to prevent one or more tray plates from being lowered as the movement plate moves downward in the guide frame.

24. The multi-stacker of claim 22, wherein the at least one stopper mechanism comprises:

a blocking protrusion configured to engage a side edge of one of the plurality of tray plates; and

an actuator coupled to the blocking protrusion and configured to move the blocking protrusion into and out of a path of travel of the plurality of tray plates as the plurality of tray plates move upward and downward.

25. The multi-stacker of claim 22, further comprising an elevator mechanism coupled to the movement plate and configured to move the movement plate upward and downward along the guide frame.

26. The multi-stacker of claim 25, wherein the elevator mechanism comprises:

a rail that is movably mounted on the multi-stacker and that is connected to the movement plate;

a rack mounted on the rail;

a motor mounted on the multi-stacker adjacent the rail; and

a pinion gear mounted on a rotating shaft of the motor, wherein the pinion gear engages the rack mounted on the rail, and wherein rotational movement of the pinion gear causes the rail and the movement plate to move upward and downward.

27. The multi-stacker of claim 26, further comprising a support plate connected between the rail and the movement plate and configured to dampen vibrations of the movement plate during movement of the movement plate.

28. The multi-stacker of claim 26, further comprising at least one support plate connected to a lower end of the rail and configured to dampen vibrations of the rail during movement of the rail.

29. The multi-stacker of claim 22, further comprising a sensor configured to determine positions of the plurality of tray plates.